ABHILASHA

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Education

Malaviya National Institute of Technology, Jaipur **2021 – 2025**
B.Tech in Electrical Engineering *CGPA: 7.41*

Experience

Software Intern | NXP Semiconductors **January, 2025 – June, 2025**

- Automated release processes using Python scripts and shell tools, reducing manual intervention by 90% and improving reliability of CI/CD workflows.
- Worked on system-level components across multi-core platforms, involving task scheduling, memory management, and peripheral interfacing within constrained runtime environments.
- Designed and executed unit and integration test cases using structured validation frameworks, improving code coverage by 7% and enabling regression-safe deployments.
- Contributed to application-layer logic within multithreaded environments, focusing on thread synchronization, resource handling, and inter-process communication (IPC) for stable feature delivery.
- Utilized open-source compliance tools such as Black Duck to detect and mitigate vulnerabilities, ensuring alignment with software license policies and secure development lifecycle standards.

Projects

Deep Learning-Based RSMA Optimization for RIS-Aided THz Massive MIMO

- Built a deep learning model to optimize RSMA in RIS-assisted THz massive MIMO systems for next-generation wireless communication.
- Developed Transformer-based neural networks for efficient precoding, channel estimation, and signal processing.
- Integrated tools like Python, PyTorch, TensorFlow, NumPy, and Matplotlib for model training, evaluation, and visualization.
- Evaluated multiple feedback mechanisms (csiNet, GMMV-LAMP) and compared performance using NMSE and throughput metrics.
- Explored use cases including enhanced signal reliability and spectral efficiency under different transmission scenarios.
- **Technologies:** Python, PyTorch, TensorFlow, RIS, THz MIMO, Transformer, NMSE, csiNet, GMMV-LAMP

Resume Analyzer & Job Match Predictor

- Developed a full-stack web application to evaluate resume-job fit using NLP and machine learning techniques.
- Extracted and processed text from resumes and job descriptions, and calculated match scores using TF-IDF and cosine similarity.
- Displayed match results, missing keywords, and improvement tips in a clean frontend built using HTML, CSS, and Bootstrap.
- Implemented file upload handling, input validation, and keyword-based scoring to help users optimize their resumes.
- **Technologies:** Python, Flask, Scikit-learn, NLTK, TF-IDF, Cosine Similarity, HTML, Tailwind CSS

Technical Skills

Programming Languages: Python, C, C++, JavaScript, SQL
Web & Frontend Development: HTML, CSS, JavaScript, Tailwind, AngularJS 2.0, React
Backend & Frameworks: Node.js, Express, MongoDB, pySpark
Machine Learning & Statistical Tools: TensorFlow, Scikit-learn, Tableau, Statistical analysis, Time series modeling, Semi-supervised learning, Data drift adaptation
Concepts & Methodologies: Object-Oriented Programming (OOP), Distributed and Parallel Processing, Advanced Analytics, Real-time Data Processing
Tools & Platforms: VS Code, Git/GitHub, Bitbucket, Jenkins, MATLAB, Arduino IDE, TRACE32 (Lauterbach), Black Duck, Manufacturing Execution Systems (MES)

Relevant Coursework

- Data Structures
- Algorithms
- DBMS
- Operating Systems
- OOP Concepts
- Computer Networks
- Analog Electronics
- Digital Electronics

Achievements

- Qualified for the JPMorgan Chase **"Code for Good"** Hackathon 2023, selected among top applicants for showcasing innovative problem-solving and collaborative skills in a real-world tech challenge.
- Participated in the **Airtel SheCodes 2024 Hackathon**, Ranked in the top 10% among 4000 candidates for innovative problem-solving and impactful solution design.